

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/002417

International filing date (day/month/year)
09.03.2004

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC
B01D21/00, B01D21/26, B01D17/02

Applicant
COOPER CAMERON CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the International application
- ☐ Box No. VIII Certain observations on the International application

2. FURTHER ACTION

If a demand for International preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 65 1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/002417

Box No. 1 Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
- 3 ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a))
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis* 1 and 66.7(b))
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis* 1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date
3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	5-15,21,22,24-29
	No: Claims	1-4,16-20,23,30
Inventive step (IS)	Yes: Claims	9,10
	No: Claims	1-8,11-30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

- 1 The following documents are mentioned in the ISR:

D1 : US 4 626 237 A (GALLOWAY JR JIMMIE G) 2 December 1986 (1986-12-02)
D2 : EP 1 352 679 A (COOPER CAMERON CORP) 15 October 2003 (2003-10-15)
D3 : US 5 248 421 A (ROBERTSON GLEN A) 28 September 1993 (1993-09-28)

2. INDEPENDENT CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 1** is not new in the sense of Article 33(2) PCT.

Document **D1** discloses (cf. fig. 1) a separator device for separating a fluid in its constituents using centrifugal and/or gravitational forces and characterized by having a feed nozzles for discharging the fluid inside the separation vessel located on a central pipe and connected to curved tubes, which direct the feed first radially and then tangentially with respect to the central axis of the vessel. The thus separated phases are collected at different levels by similarly shaped tubes inside the separator vessel and then sent outside the vessel after passing the central pipe located on the vessel's axis.

3. DEPENDENT CLAIMS

- 3.1 Dependent **claims 2-4, 16-20, 23, 30** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

- 3.2 The combination of the features of dependent **claims 5-8, 11-15, 21, 22, 24-29** are not known from the available prior art (Art. 33(2) PCT).

Their features, however, do not seem to introduce subject-matter acceptable under Art. 33(3) PCT since they refer to technical solutions which come within the scope of the customary engineering practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen.

- 3.3 The combination of the features of dependent **claims 9 and 10** is neither known from,

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nor rendered obvious by, the available prior art. By discharging the heavy phases from holes located on the helicoil, better gravity settlement of the different phases within the vessel can be achieved. Thus an improvement vs. the separation performance of separation devices having moving parts (e.g. D1) can be achieved.

4. The reference to patent literature indicated on page 1 of the description does not seem to be correct.